THE CLAIMS

What is claimed is:

1. A method for setting an initial servo track pitch for a servo system of a hard disk drive having at least one hard disk, an actuator, a secondary actuator, a read/write head corresponding each hard disk and at least one crash stop for the actuator, the method comprising steps of:

(a) positioning the actuator against the crash stop;

(b) writing a burst pattern on at least one hard disk while the actuator is positioned against the crash stop and the read/write head is in a first position;

(c) changing a bias voltage applied to the secondary actuator by a predetermined bias voltage increment for a predetermined number of times to change the position of the read/write head a corresponding number of times and writing a burst pattern on at least one hard disk at each respective changed position of the read/write head;

(d) determining an amount of overlap for at least one selected burst pattern having two burst patterns that are adjacent to the burst pattern;

(e) terminating the method for setting the initial servo track pitch when the amount of overlap determined for each selected burst pattern is within a selected criterion of a predetermined target overlap value;

(f) increasing the predetermined bias voltage increment when the amount of overlap for each selected burst pattern is greater than the predetermined target overlap value, and decreasing the predetermined bias voltage increment when the amount of overlap for each selected burst pattern is less than the predetermined target overlap value; and

(g) repeating steps (a) through (e) with the new predetermined bias voltage increment.

2. The method according to claim 1, wherein the step of determining the amount of overlap for each selected burst pattern includes steps of

measuring an amplitude of a plurality of selected burst patterns, each selected burst pattern having two adjacent burst patterns;

measuring an amplitude of each burst pattern that is adjacent to each selected burst pattern; and

determining the overlap for each selected burst pattern as a sum of the amplitudes of the burst patterns that are adjacent to the selected burst pattern divided by the amplitude of the selected burst pattern.

3. The method according to claim 2, wherein the step of measuring the amplitude of the plurality of selected burst patterns and the step of measuring the amplitude of each burst pattern are each performed a predetermined number of times,

the method further comprising steps of:

averaging the measured amplitudes of each respective selected burst pattern; and

averaging the measured amplitudes of each burst pattern that is adjacent to each respective burst pattern, and

wherein the step of determining the overlap for each respective selected burst pattern is based on the averaged measured amplitudes of each respective burst pattern.

4. The method according to claim 1, wherein the predetermined number of times the position of the read/write head is changed is sixteen.

5. The method according to claim 4, wherein the overlap is determined for fourteen burst patterns.

6. The method according to claim 1, wherein the crash stop is an inside diameter crash stop.

7. The method according to claim 1, wherein the crash stop is an outside diameter crash stop.

8. The method according to claim 1, wherein the secondary actuator is a microactuator.

9. The method according to claim 1, wherein the secondary actuator is a milliactuator.